



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,727	04/23/2001	Alando M. Ballantyne	014208.1360	4537
35005	7590	12/22/2004	EXAMINER	
BAKER BOTTS L.L.P. 2001 ROSS AVENUE, 6TH FLOOR DALLAS, TX 75201			TANG, KUO LIANG J	
			ART UNIT	PAPER NUMBER
			2122	
DATE MAILED: 12/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/840,727	BALLANTYNE ET AL.	
	Examiner	Art Unit	
	Kuo-Liang J Tang	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12, 23 and 25 is/are allowed.
- 6) ☒ Claim(s) 1-6, 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/30/2004 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-23 and 25 have been fully considered. Arguments for amended Claims 7-12 (page 11-12), 23 and 25 (page 14-16) are persuasive. Arguments for Claims 1-6 and 13-22 (page 15) are not persuasive and remain rejected as:

Claims 1-2, 4-6, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stefaniak in view of van Elkeren.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lektion in view of Stefaniak.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stefaniak in view of van Elkeren, further in view of Sandhu.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lektion in view of Stefaniak, further in view of Shanmugasundaram.

Art Unit: 2122

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over
Lecture in view of Stefaniak, further in view of Shanmugasundaram,
further in view of Vermeire.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over
Stefaniak in view of van Elkeren, further in view of Shanmugasundaram.

It should be noted that on page 15, Applicants just make mere statements
“Applicants respectfully traverse these objections and all assertions and holdings
therein.” and “Applicants reserve the right to discuss these distinctions in a future
Response or on Appeal, if appropriate.” only.

Claims 7-12, 23 and 25 hereby this action are allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-6, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Stefaniak, US Patent No. 6,550,054, in view of van Elkeren et al., US Patent No.
6,618,852 (hereinafter van Elkeren).

As Per Claim 1, Stefaniak disclosed: A method for reporting data from a legacy computer system using Extensible Markup Language, the method comprising:

- generating a model of the legacy computer system, the model comprising one or more incidents within one or more applications that output data; (see Column 1, Lines 58-67).

- mapping the model of the legacy computer system to an Extensible Markup Language schema; (see Column 1, Line 67 to column 2, lines 1-4). "document type definitions" is XML schema. and

- based at least on the mapping of the model of the legacy computer system to the Extensible Markup Language schema, automatically modifying one or more applications of the legacy computer system that output data, (see Column 5, Lines 39-43) the one or more modified applications operable to output data written from the legacy computer system in Extensible Markup Language. (see Column 5, Lines 43-57).

Stefaniak didn't explicitly disclose using a Document Object Model. However, van Elkeren taught automatically modifying one or more applications of the legacy computer system, the modified application operable to output data written using a Document Object Model from the legacy computer system in Extensible Markup Language. (see Column 12, Lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use DOM, as suggested by van Elkeren, to apply to output XML data. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a simple means of reading and writing data to and from an XML tree structure.

As Per Claim 2, the rejection of claim 1 is incorporated and further Stefaniak disclosed:

-providing the legacy computer system with a writer engine, the writer engine having the Extensible Markup Language Schema loaded as a data file; (see Column 1, Line67 to column 2, lines 1-4). "document type definitions" is XML schema. and

Stefaniak didn't explicitly disclose populating a Document Object Model. However, van Elkeren taught calling the writer engine with the modified one or more applications when the one or more applications output data, the writer engine populating the Document Object Model according to the Extensible Markup Language schema by building a Document Object Model instance with one or more contexts. (see Column 12, Lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to populate DOM, as suggested by van Elkeren, to apply to output XML data. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a simple means of reading and writing data to and from an XML tree structure.

As Per Claim 4, Stefaniak disclosed: A system for reporting data from a legacy computer system in an Extensible Markup Language format, the system comprising:

-a modeling engine in communication with the legacy computer system, the modeling engine operable to generate a model of outputted data written by an application residing on the legacy computer system; (see Column 1, Lines 58-67).

Art Unit: 2122

-a mapping engine in communication with the modeling engine, the mapping engine operable to generate a modification specification by mapping the model of the outputted data written by the application residing on the legacy computer system to an Extensible Markup Language schema; (see Column 5, Lines 43-57). and

-a code generation engine in communication with the mapping engine and the legacy computer system, the code generation engine operable to modify code of the application residing on the legacy computer system, based at least on the generated modification specification, to directly output data from Extensible Markup Language. (see Column 5, Lines 43-57).

Stefaniak didn't explicitly disclose using a Document Object Model. However, van Elkeren taught a code generation engine in communication with the mapping engine and the legacy computer system, the code generation engine operable to modify legacy computer system application code to directly output data from a Document Object Model as Extensible Markup Language. (see Column 12, Lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use DOM, as suggested by van Elkeren, to apply to output XML data. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a simple means of reading and writing data to and from an XML tree structure.

As Per Claim 5, the rejection of claim 4 is incorporated and further Stefaniak disclosed:

Art Unit: 2122

-a context table associated with the legacy computer system, the context table providing the Extensible Markup Language schema to the legacy computer system; and

-a writer engine loaded on the legacy computer system and having the Extensible Markup Language schema stored as a data file, the writer engine communicating with the modified legacy computer system applications to buffer data in plural contexts for output as Extensible Markup Language. (see Column 6, Lines 41-58). This is followed by making an inquiry whether or not there are any more screens in the UML package (block 67). If the answer to this enquiry is yes, then a return is made back to block 62 (FIG. 5B) as denoted by a connector E. If on the other hand, the answer to the above inquiry is no then a further inquiry is made to determine whether or not there are any more UML packages (block 68). If the answer to this inquiry is yes, then a return is made back to the block 61 (FIG. 5B) as denoted by a connector D. If on the other hand, the answer to the above inquiry is no, then a step of saving the tempfile as tempfile.txt is executed (block 69). After this, the process ends (bubble 70).”).

Stefaniak didn't explicitly disclose using a Document Object Model. However, van Elkeren taught a writer engine loaded on the legacy computer system and having the Extensible Markup Language schema stored as a data file, the writer engine communicating with the modified legacy computer system applications to buffer data in plural contexts within a Document Object Model for output as Extensible Markup Language. (see Column 12, Lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use DOM, as suggested by van Elkeren, to apply to output XML data. The modification would have been obvious

Art Unit: 2122

because one of ordinary skill in the art would have been motivated to provide a simple means of reading and writing data to and from an XML tree structure.

As Per Claim 6, the rejection of claim 5 is incorporated and further Stefaniak disclosed:

- the writer engine is coded in the computer language of the legacy computer system. (see Column 6, Lines 41-58) and (see Column 8, Lines 52-55).

As Per Claim 20, Stefaniak disclosed: A method for outputting data from a legacy computer system from a Document Object Model instance as Extensible Markup Language, the method comprising:

- modifying an application of the legacy computer system to output data having a schema element of a target Extensible Markup Language schema, the output data corresponding to a write operation of the application; (see Fig. 6).

- outputting data from the modified application, the output data having the schema element of the target Extensible Markup Language schema; (see Column 2, Lines 33-36) and (see Column 6, Lines 56-57).

- aligning the schema element of the output data and a current context; (see Column 6, Lines 25-33).

- writing the schema element of the output data to a current one of plural contexts of the target Extensible Markup Language schema; (see Column 6, Lines 59-67 to Column 7, Lines 1-4).

Art Unit: 2122

Stefaniak didn't explicitly disclose using a Document Object Model. However, van Elkeren taught populating a Document Object Model with the output data to output an Extensible Markup Language instance. (see Column 12, Lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use DOM, as suggested by van Elkeren, to apply to output XML data. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a simple means of reading and writing data to and from an XML tree structure.

As Per Claim 21, the rejection of claims 20 is incorporated and further Stefaniak disclose aligning the schema element further comprises:

- determining that the schema element of the output data is a descendant of the current context; (see Column 6, Lines 25-33) and

- creating appropriate Extensible Markup Language tags down through the schema element of the output data, each Extensible Markup Language tag down through the schema element of the output data being associated with a ancestor of the schema element of the output data. (see Column 6, Lines 34-40)

5. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lection et al., US Patent No. 6,418,446 (hereinafter Lection) in view of Stefaniak.

Art Unit: 2122

As Per Claim 13, Lektion disclosed: A system for outputting data from a Document Object Model as Extensible Markup Language, the system comprising:

- a computer system having an application that outputs data, each data instance corresponding to a write operation of the application; (see Column 3, Lines 48-52).

Lektion didn't explicitly disclose using a writer engine. However, Stefaniak taught a engine operable to write the data output by the application in plural active contexts; wherein the application calls the writer engine when the application outputs data, the writer engine operable to build a Document Object Model instance for output of the data in accordance with the Extensible Markup Language schema. (see Column 5, Lines 43-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate XMI/UML DTD generator, as suggested by Stefaniak into the system of Lektion, to produces XMI/UML DTD streams. The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a simple means to generate XML codes.

As Per Claim 14, the rejection of claims 13 is incorporated and further Lektion didn't explicitly disclose aligned element. However, Stefaniak taught the writer engine populates a Document Object Model as a schema element aligned with the current one of the plural contexts by creating Extensible Markup Language tagged nodes down through the schema element of the output data if the schema element of the output data is a descendant of the current context. (see Column 6, Lines 25-33) and (see Column 6, Lines 41-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Stefaniak into the system of

Art Unit: 2122

Lecture, to align the elements. The modification would have been obvious because one of ordinary skill in the art would have been motivated to easily process the preformatted documents.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stefaniak in view of van Elkeren, further in view of Sandhu et al., US Patent No. 6,347,307 (hereinafter Sandhu).

As Per Claim 3, the rejection of claim 1 is incorporated and further Stefaniak and van Elkeren taught written using a Document Object Model (see van Elkeren, Column 12, Lines 5-10). Stefaniak and van Elkeren didn't explicitly disclose applying XSLT stylesheets. However, Sandhu taught applying one or more XSLT stylesheets to restructure the Document Object Model instance for outputting data in a predetermined format. (see Column 50, Lines 24-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use XSLT stylesheets, as suggested by Sandhu, to apply to DOM. The modification would have been obvious because one of ordinary skill in the art would have been motivated to make the document usable by other computer system.

7. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecture in view of Stefaniak, further in view of Shanmugasundaram et al. "Relational Databases for Querying XML Documents: Limitations and Opportunities". Proceedings

Art Unit: 2122

of the 25th VLDB Conference, Edinburgh, Scotland, 1999 (hereinafter Shanmugasundaram).

As Per Claim 15, the rejection of claims 14 is incorporated and further Lektion and Stefaniak didn't explicitly disclose traverse the Extensible Markup Language tagged nodes for the current context up to the minimal mutual ancestor. However, Shanmugasundaram taught the writer engine is further operable to determine a minimal mutual ancestor of the schema element of the output data and the current context and to traverse the Extensible Markup Language tagged nodes for the current context up to the minimal mutual ancestor and to create Extensible Markup Language tags for the schema element of the output data down from the mutual ancestor. (see page 5, left hand column last 2 lines to right hand column, lines 1-14) and (see page 6, left hand column last 2 lines to right hand column first three lines). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use traversed technique, as suggested by Sandhu, to construct DTD node. The modification would have been obvious because one of ordinary skill in the art would have been motivated to lookup node in DTD graph.

As Per Claim 16, the rejection of claims 13 is incorporated and further Lektion and Stefaniak disclose the computer system comprises a legacy computer system. (see Stefaniak , Column 1, Lines 58-67).

Art Unit: 2122

As Per Claim 17, the rejection of claims 16 is incorporated and further Lektion and Stefaniak disclose the application comprises a legacy computer system application modified to output an Extensible Markup Language schema element with the output data. (see Stefaniak, Column 5, Lines 43-57).

As Per Claim 18, the rejection of claims 16 is incorporated and further Lektion and Stefaniak disclose the writer engine is written in the code of the legacy computer system. (see Stefaniak , Column 6, Lines 41-58) and (see Column 8, Lines 52-55).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lektion in view of Stefaniak, further in view of Shanmugasundaram, further in view of Vermeire et al., US Patent No. 6,209,124 (hereinafter Vermeire).

As Per Claim 19, the rejection of claims 18 is incorporated and further Lektion, Stefaniak and Shanmugasundaram didn't explicitly disclose cobol. However, Vermeire taught the code comprises COBOL. (see Column 18, Lines 18-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use COBOL, as suggested by Vermeire, as the application language. The modification would have been obvious because one of ordinary skill in the art would have been motivated to utilize a constructed intermediary acting with the host machine and its program applications. (see Column 5, Lines 7-17).

Art Unit: 2122

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stefaniak in view of van Elkeren, further in view of Shanmugasundaram.

As Per Claim 22, the rejection of claims 21 is incorporated and further Stefaniak and van Elkeren disclosed

- determining a minimal mutual ancestor of the schema element and the current context; (see Stefaniak , Column 6, Lines 25-33) and (see Column 6, Lines 25-33).

“diamond 58” and “block 55” determine the minimal mutual ancestor. and

- creating the Extensible Markup Language tags for the schema element of the output data down from the mutual ancestor to the schema element of the output data. (see Stefaniak , Column 6, Lines 34-40)

Stefaniak and van Elkeren didn't explicitly disclose traverse the Extensible Markup Language tagged nodes for the current context up to the mutual ancestor of the schema element of the output data and of the current context. However, Shanmugasundaram taught traversing the Extensible Markup Language tags for the current context up to the mutual ancestor (see page 5, left hand column last 2 lines to right hand column, lines 1-14), and (see page 6, left hand column last 2 lines to right hand column first three lines). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use traversed technique, as suggested by Sandhu, to construct DTD node. The modification would have been obvious because one of ordinary skill in the art would have been motivated to lookup node in DTD graph.

Allowable Subject Matter

10. Claims 7-12, 23 and 25 are allowed.

The following is an examiner's statement of reasons for allowance:

As for independent Claim 7, the examiner agrees with Applicants' points on pages 11-12 of the Request for Continued Examination that the prior of record, i.e., US Patent No. 6,418,446 to Lektion et al. ("Lektion"), when taken individually or in combination, fails to teach the following limitation taken in combination with the remaining limitations of the independent claim 7:

"... the output data corresponding to a write operation of the application for outputting the data, the one or more Extensible Markup Language Document Object Model contexts identifying a position in a target Extensible Markup Language schema of the output data corresponding to the write operation of the application; ..."

Lektion, instead, only teaches a method, system, and computer-readable code for a technique with which data having dynamically variable record formats (such as that created when a dynamic schema is used with a data repository) can be easily and efficiently accommodated, without requiring modification of the code that processes the data each time the underlying data format changes. Lektion does not teach establishing a relationship of the output data and one or more Extensible Markup Language Document Object Model contexts, the output data corresponding to a write operation of the application for outputting the data, the one or more Extensible Markup Language Document Object Model contexts identifying a position in a target Extensible Markup

Art Unit: 2122

Language schema of the output data corresponding to the write operation of the application.

As for independent Claims 23 and 25, the examiner agrees with Applicants' points on pages 14-16 of the Request for Continued Examination that the prior of record, i.e., US Patent No. 6,550,054 to Stefaniak, when taken individually or in combination, fails to teach the following limitation taken in combination with the remaining limitations of the independent claims 23 and 25:

“... defining a control flow graph of the identified output incidents ... based at least on the association of the identified output incidents within the one or more applications with the Extensible Markup Language schema, creating a modification specification for modifying the one or more legacy computer system applications to provide output from a Document Object Model instance as Extensible Markup Language; ...”

Stefaniak, instead, only teaches a method includes the steps of transforming a terminal-based screen application into an application specification; converting the application specification into a modeling language-based representation; and, displaying the modeling language-based representation with a graphical user interface. Stefaniak does not teach defining a control flow graph of the identified output incidents and based at least on the association of the identified output incidents within the one or more applications with the Extensible Markup Language schema, creating a modification specification for modifying the one or more legacy computer system applications to provide output from a Document Object Model instance as Extensible Markup

Art Unit: 2122

Languageschema of the output data corresponding to the write operation of the application.

Art Unit: 2122

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang J Tang whose telephone number is (571) 272-3705. The examiner can normally be reached on 8:30AM - 7:00PM (Monday – Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kuo-Liang J. Tang

Software Engineer Patent Examiner


TUAN DAM
SUPERVISORY PATENT EXAMINER